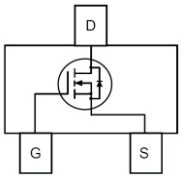
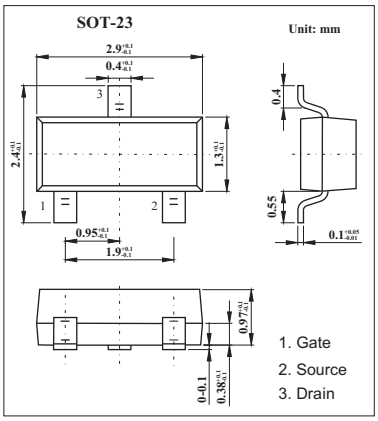
N-Channel PowerTrench MOSFET

FDN5630

■ Features

- V_{DS} (V) = 60V
- $R_{DS(ON)}$＜100 mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$＜120 mΩ (V_{GS} = 6V)
- Optimized for use in high frequency DC/DC converters
- Low gate charge
- Very fast switching





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-to-source voltage	V_{GS}	±20	V
Drain curent -Continuous	I_D	1.7	A
-Pulsed		10	
Power dissipation	P_D	0.5	W
Maximum Junction-to-Ambient	$R_{\theta JA}$	250	℃/W
Junction and storage temperature range	T_J,T_{STG}	-55 to +150	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source Breakdown voltage	$V_{(BR)DSS}$	I_D= 250 μA, V_{GS} = 0V	60			V
Breakdown Voltage Temperature Coefficient	$\triangle V_{(BR)DSS}/\triangle T_J$	I_D = 250 μA, Referenced to 25℃		63		mV/℃
Static drain-source on- resistance	$R_{DS(on)}$	I_D= 1.7A, V_{GS} = 10V		73	100	mΩ
		I_D= 1.7A, V_{GS} = 10V Ta = 125℃		127	180	
		I_D= 1.6A, V_{GS} = 6V		83	120	
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D= 250 μA	1	2.4	3	V
Forward Transconductance	g_{fs}	V_{DS} = 10 V, I_D = 1.7 A		6		S
Gate-source leakage current	I_{DSS}	V_{DS} = 48 V, V_{GS} = 0V			1	μA
Gate-source forward leadage	I_{GSS}	V_{GS} =-20V			-100	nA
Gate-source reverse leadage		V_{GS} =20V			100	
Total Gate Charge	Q_g	V_{DS} =20V ,V_{GS} = 10 V , I_D=1.7 A		7	10	nC
Gate-Source Charge	Q_{gs}			1.6		
Gate-Drain Charge	Q_{gd}			1.2		
Turn-on delay time	$t_{d(on)}$	V_{DD}= 30 V, I_D= 1 A V_{GS} =10 V, R_{GEN}= 6 Ω		10	20	ns
Rise time	t_r			6	15	
Turn-off delay time	$t_{d(off)}$			15	28	
Fall time	t_r			5	15	
Input capacitance	C_{iss}	V_{DS} = 15 V, V_{GS} = 0 V, f= 1MHz		400		pF
Output capacitance	C_{oss}			102		
Reverse transfer capacitance	C_{rss}			21		
Maximum Continuous Drain-Source Diode Forward Current	I_S				0.42	A
Diode forward voltage	V_{SD}	V_{GS} = 0 V , I_S = 0.42 A		0.72	1.2	V